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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/251,998	02/19/1999	RICHARD BAXTER HULL	5-4-1-4	3940

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EXAMINER	
ENGLAND, DAVID E	
ART UNIT	PAPER NUMBER
2143	8

DATE MAILED: 11/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/251,998	Applicant(s) HULL ET AL.	
	Examiner David E. England	Art Unit 2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/10/2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Claims 1 – 21 are presented for examination.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Evidence that claim 3 fail(s) to correspond in scope with that which applicant(s) regard as the invention can be found in Paper No. 3 filed 10/10/2002. In that paper, applicant has stated, "Since non-side-effect tasks have low processing overhead, a non-side-effect task may be eagerly executed even if it is not known whether its associated enabling condition will ultimately be true." and this statement indicates that the invention is different from what is defined in the claim(s) because in the claim it states, "that a particular task whose execution does not result in the initiation of a side-effect, (i.e. non-side-effect), action is eligible for eager execution prior to determining that the enabling condition associated with the particular task will evaluate to true. The claim would make one believe that the enabling condition needs to be known unlike what is stated in the specification where it is not known.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Hoenninger et al. U.S. Patent No. 6260058 (hereinafter Hoenninger).

3. Referencing claim 1, Hoenninger teaches a method for operation of a workflow system for processing an object by executing a plurality of tasks, each of said tasks having an associated enabling condition indicating whether the task is to be executed for said object, (e.g. col. 6, lines 33 – 64), and wherein execution of at least one of said tasks results in the initiation of aside-effect action performed by a component external to said workflow system, said method comprising the step of, (e.g. col. 9, line 49 – col. 10, line 31):

4. determining whether a task is to be eagerly executed based at least in part on the evaluation of enabling conditions and whether execution of the task results in the initiation of a side-effect action, (e.g. col. 10, line 66 – col. 11, line 24).

5. Claim 11 is rejected for similar reasons as stated above.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 2 – 8, 13 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoenninger (6260058) in view of Codd et al. (6421667) (hereinafter Codd).

8. As per claim 2, Hoenninger does not specifically teach determining that a particular task whose execution results in the initiation of a side-effect action is eligible for eager execution only if it is determined that the enabling condition associated with the particular task will evaluate to true. Codd teaches determining that a particular task whose execution results in the initiation of a side-effect action is eligible for eager execution only if it is determined that the enabling condition associated with the particular task will evaluate to true, (e.g. col. 16, lines 36 – 65). It would have been obvious to one skilled in the art at the time the invention was made to combine Codd with Hoenninger because it would be more convenient for one to utilize regular logic rather then reverse logic in the determination of an enabling condition to determine if the side-effect action would have high priority.

9. As per claim 3, Hoenninger does not specifically teach determining that a particular task whose execution does not result in the initiation of a side-effect action is eligible for eager execution prior to determining that the enabling condition associated with the particular task will evaluate to true. Codd teaches determining that a particular task whose execution does not result in the initiation of a side-effect action is eligible for eager execution prior to determining that the enabling condition associated with the particular task will evaluate to true, (e.g. col. 16, lines 36 – 65). It would have been obvious to one skilled in the art at the time the invention was made to combine Codd with Hoenninger because it would be more convenient for one to utilize regular logic rather then reverse logic in the determination of an enabling condition to determine if the non-side-effect action would have high priority.

10. As per claim 4, Hoenninger does not specifically teach determining whether a task is to be eagerly executed further comprises the step of:

11. partially evaluating said enabling conditions. Codd teaches determining whether a task is to be eagerly executed further comprises the step of:

12. partially evaluating said enabling conditions, (e.g. col. 16, lines 36 – 65). It would have been obvious to one skilled in the art at the time the invention was made to combine Codd with Hoenninger because if the enabling condition has information that does not specifically pertain to the eagerly executed task it would be more efficient if only the information that pertained to the eagerly executed task was evaluated.

13. As per claim 5, Hoenninger does not specifically teach determining whether a task is to be eagerly executed is further based on whether the task contributes to the production of a target value. Codd teaches determining whether a task is to be eagerly executed is further based on whether the task contributes to the production of a target value, (e.g. col. 3, line 66 – col. 4, line 33). It would have been obvious to one skilled in the art at the time the invention was made to combine Codd with Hoenninger because if the task does not specifically pertain to the target value it would be more efficient if only the tasks that contribute to the production of a target value to have a high priority over the tasks that do not contribute the production of the target value.

14. As per claim 6, Hoenninger does not specifically teach determining that a particular task is unneeded for processing of the object based at least in part on partial evaluation of an enabling condition of a task which depends on output of said particular task. Codd teaches determining that a particular task is unneeded for processing of the object based at least in part on partial evaluation of an enabling condition of a task which depends on output of said particular task, (e.g. col. 16, lines 36 – 65 & col. 26, lines 22 – 40). It would have

been obvious to one skilled in the art at the time the invention was made to combine Codd with Hoenninger because of similar reasons as stated above.

15. As per claim 7, Hoenninger does not specifically teach determining that a particular task is necessary for processing of the object based at least in part on the evaluation of enabling conditions of tasks that depend on said particular task. Codd teaches determining that a particular task is necessary for processing of the object based at least in part on the evaluation of enabling conditions of tasks that depend on said particular task, (e.g. col. 16, lines 36 – 65 & col. 26, lines 22 – 40). It would have been obvious to one skilled in the art at the time the invention was made to combine Codd with Hoenninger because of similar reasons as stated above.

16. As per claim 8, Hoenninger does not specifically teach determining that a particular task is necessary for processing of the object based at least in part on the evaluation of enabling conditions that depend on the output of said particular task. Codd teaches determining that a particular task is necessary for processing of the object based at least in part on the evaluation of enabling conditions that depend on the output of said particular task, (e.g. col. 16, lines 36 – 65 & col. 26, lines 22 – 40). It would have been obvious to one skilled in the art at the time the invention was made to combine Codd with Hoenninger because of similar reasons as stated above.

17. Claims 13 – 19 are rejected for similar reasons as stated above.

18. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoenninger (6260058) in view of Lindsley (6430593).

19. As per claim 9, Hoenninger does not specifically teach determining is performed repeatedly during the processing of the object. Lindsley teaches determining is performed repeatedly during the processing of the

object, (e.g. col. 21, line 9 – col. 22, line 45 & col. 34, lines 44 – 53). It would have been obvious to one skilled in the art at the time the invention was made to combine Lindsley with Hoenninger because if tasks enabling conditions

20. Claims 10, 11, 20, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoenninger (6260058) in view of Van Praet et al. (5854929) (hereinafter Van Praet) in further view of Smith et al. (5561762) (hereinafter Smith).

21. As per claim 10, Hoenninger does not specifically teach wherein a memory of said workflow system stores a graph representing data flow dependencies and enabling flow dependencies between tasks and enabling conditions, said method further comprising the step of:

22. propagating changes through said graph based on new outputs of completed tasks. Van Praet teaches wherein a memory of said workflow system stores a graph representing data flow dependencies, (e.g. col. 22, lines 7 – 14 & col. 8, lines 49 – 64), and enabling flow dependencies between tasks and enabling conditions, (e.g. col. 22, lines 7 – 14 & col. 8, lines 49 – 64). It would have been obvious to one skilled in the art at the time the invention was made to combine Van Praet with Hoenninger because it would be more efficient if a user had a record of graphical representation of the flow dependencies between tasks and enabling conditions. This would allow a user to view the flow of past productivity between the tasks and enabling conditions, furthermore, this could also be used for error checking a system by viewing past trends in the graph.

23. Van Praet does not specifically teach said method further comprising the step of:

24. propagating changes through said graph based on new outputs of completed tasks. Smith teaches said method further comprising the step of:

25. propagating changes through said graph based on new outputs of completed tasks, (e.g. col. 5, line 51 – col. 6, line 50). It would have been obvious to one skilled in the art at the time the invention was made to

combine Smith with the combine system of Hoenninger and Van Praet because of similar reasons as stated above.

26. As per claim 11, Hoenninger and Smith do not specifically teach said step of propagating changes is based on predefined propagation rules. Van Praet teaches said step of propagating changes is based on predefined propagation rules, (e.g. col. 11, line 9 – col. 12, line 60). It would have been obvious to one skilled in the art at the time the invention was made to combine Van Praet with the combine system of Hoenninger and Smith because it would be more efficient for a user to keep track of trends in new outputs of completed tasks and enabling conditions if there were a set of predefined propagation rules, (i.e. algorithms), to aid in the graphing of new outputs of completed tasks and enabling conditions.

27. Claims 20 and 21 are rejected for similar reasons as stated above.

Conclusion

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

29. a. Zhang et al. U.S. Patent No. 6016478 discloses Scheduling system with methods for peer-to-peer scheduling of remote users.

30. b. He U.S. Patent No. 6105048 discloses Apparatus and method for the real-time processing of a plurality of tasks.

31. c. Dulong et al. U.S. Patent No. 4985831 discloses Multiprocessor task scheduling system.

32. d. Nakaoka U.S. Patent No. 6092048 discloses Task execution support system.

33. e. Hosaka et al. U.S. Patent No. 5701481 discloses Data processing apparatus which operates in a plurality of operation modes and includes first and second monitoring means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. England whose telephone number is 703-305-5333. The examiner can normally be reached on Mon-Thur, 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on 703-308-5221. The fax phone numbers for the organization where this application or proceeding is assigned are none for regular communications and none for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is none.

David E. England
Examiner
Art Unit 2143

De DE
October 24, 2002

DAVID WILEY
SUPERVISORY PATENT EXAMINER
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